UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,443	11/12/2003	Elmer William Jensen	Q1P	8706

7590 09/06/2007

Motoko Yuasa
Pacific Ring Service Inc.
1143 Christina Mill Drive
Newark, DE 19711

EXAMINER	
CHENG, PETER L	

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
09/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/712,443	JENSEN ET AL.	
	Examiner	Art Unit	
	Peter L. Cheng	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/1/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because:

- For the sole figure, it is suggested that a label, such as **Figure 1**, be added to the drawing since the specification refers to the drawing as "Figure 1" [**page 3, line 6**];

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "**observer 9**" [**specification, page 4, line 17**].

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because:

- **Line 4:** regarding "said work of art", the word "said" should be avoided;
- **Line 5:** regarding "said camera", the word "said" should be avoided;

Correction is required. See MPEP § 608.01(b).

5. The use of the trademarks "NOUVIR" [**page 3, section "Description of Preferred Embodiments, 1st paragraph, line 11**], "GENUINE FRACTAL" [**page 4, 1st paragraph, line 10**], "PHOTOSHOP" [**page 4, 2nd paragraph, line 8**] have been noted

in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

6. The disclosure is objected to because of the following informalities:

- There are some typographical and grammatical errors in the disclosure; for example, **page 1, section "Related Art", 1st paragraph, line 3 (**"6experienced"**), page 4, 2nd paragraph, line 8 (**assume a preposition or conjunction is required between words "station" and "Ultra"**);**

- **Page 1, section "Related Art", 1st paragraph, line 5:** it is assumed applicant intended to cite **ideal observer's** instead of **ideal observer**;

- **Page 3, section "Description of Preferred Embodiments, 2nd paragraph, line 9:** for clarity, it is assumed that applicant intended to cite **5 delta E** instead of **5 AE**;

- **Page 4, 1st paragraph, line 6** [2 instances], **line 10** [2 instances]; **page 4, 2nd paragraph, line 2:** suggest using either **megabytes** or **MB** in place of **meg**;

- **Page 4, 1st paragraph, line 8**; **page 4, 2nd paragraph, line 2:** suggest using either **gigabytes** or **GB** in place of **gig**;

- **Page 4, 1st paragraph, line 11**; **page 4, 2nd paragraph, line 8:** it is assumed that applicant intended to cite **software** instead of **softwear**;

- **Page 4, 2nd paragraph, line 3:** it is assumed that applicant intended to cite **raster** instead of **rastor**;

- **Page 4, 2nd paragraph, line 5:** for clarity, it is assumed that applicant intended to cite **automatically or manually** instead of **automatically and manually**;

- **Page 4, 2nd paragraph, line 8:** it is assumed that applicant intended to cite **GRETAG** instead of **Graytag**; if so, it should be capitalized wherever it appears and be accompanied by the generic terminology;

- **Page 4, 2nd paragraph, line 8:** similarly, if "BEST" is a trademarked name, it should be capitalized wherever it appears and be accompanied by the generic terminology;

- **Page 5, 1st paragraph, line 2:** "QOROGRAPH" does not appear to have been trademarked; if so, the trademark symbol (™) should be removed;

Appropriate correction is required.

Claim Objections

7. Claim 3 is objected to because of the following informalities:

- **Lines 1 - 2: "said control of the illumination"** lacks antecedent basis; it is assumed that applicant is referring to the "computer controlled by feedback" cited in claim 2;

8. Claim 4 is objected to because of the following informalities:

- **Lines 1 - 2: "said control of the illumination"** lacks antecedent basis; it is assumed that applicant is referring to the "computer controlled by feedback" cited in claim 2;

- **Line 2:** the specification states, "Preferably the illumination is provided by optical fiber cables"; **[page 3, line 12]**; therefore, it is assumed that applicant intended to cite **"wherein said illumination is provided by optical fiber**

cables" instead of **"wherein said *control of the* illumination is provided by optical fiber cables"**;

9. Claim 5 is objected to because of the following informalities:

- **Line 2: "the image"** lacks antecedent basis; suggest replacing with **"an image"**;

- **Line 3:** regarding **"the image"**, it is assumed that applicant is referring to the **"digital form"** of the image; if so, it is suggested that **"the image"** be replaced with **"the digital form"** or similar wording;

- **Line 4: "the CMYK color monitor image"** lacks antecedent basis; examiner assumes that applicant is referring to the result of the RGB to CMYK color conversion cited in **line 3**;

- **Line 5:** regarding **"for the image"** and **"of the image"**, it is not clear whether **image** refers to the captured, *pre-converted* (i.e., RGB) image in digital form, or the *converted* (i.e., CMYK) image in digital form; examiner assumes the latter case;

- **Line 8: "the original work of art"** lacks antecedent basis; for clarity, suggest replacing with **"a work of fine art" [line 1]** with **"an original work of art"**, or similar wording;

Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the phrase "***may be***" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over **BEVANS [US Patent Application 2004/0056965]** in view of **CHITAYAT [US Patent 3,794,422]** and **well-known prior art**.

As for claim 1, BEVANS teaches a system for the reproduction of a work of fine art comprising:

a work of art, which may be a painting, etching, drawing, collage, or any other two dimensional form of fine art,

[BEVANS teaches a "method for correcting color of digital images generated by an image capture device, the method including evaluating a reference digital image of a real-life reference target on a viewing monitor, comparing at least one color in the reference digital image with a corresponding color in the real-life reference target itself"; **page 3, paragraph 37, lines 2 – 7.**

BEVANS further teaches the acquisition of a "digital image of a reference target, which may be any object, picture, drawing, etc., that is capable of being compared to the digital image of the reference target once acquired"; **page 5, paragraph 79, lines 2 – 5.**

BEVANS further teaches "any standard recording device may be used to acquire the digital image, such as a digital camera"; **page 5, paragraph 80, lines 1 – 2];**

However, BEVANS does not specifically teach the work of art

being *mounted vertically* at a *precision distance* from a camera and flood lamps for illuminating said work of art.

For a painting, which is typically mounted vertically on a wall, it would have been obvious to one of ordinary skill in the art at the time the invention was made to acquire the digital image of the painting (or picture, drawing, or other two-dimensional work of art) while the work of art was mounted in a vertical position relative to the digital camera.

Furthermore, it is well known that digital cameras have precise distance-measuring circuitry which provide the ability to perform automatic focus adjustment.

CHITAYAT teaches the accepted use of "flood lamps" in photography, and explains, "The desirability of taking photographs with flash cameras or by means of flood lamps or other known artificial lighting has long been appreciated, and the art is already in an advanced state of technology"; **col. 1, lines 12 – 15.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of BEVANS with those of CHITAYAT and well-known prior art to produce a system for reproducing works of art as cited by the limitations in claim 1.

15. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **BEVANS [US Patent Application 2004/0056965]**, **CHITAYAT [US Patent 3,794,422]** and **well-known prior art** in view of **FUKUI [US Patent 6,167,202]**.

Regarding claim 2, BEVANS and CHITAYAT do not specifically teach the system for reproduction of a work of fine art as set forth in claim 1 wherein said

> **flood lamps are *computer controlled by feedback from said camera* so that intensity, focus, and spread will be even over the full surface of the work of art.**

With reference to **Fig. 3,** FUKUI teaches a "flash-unit microcomputer" **200** "which performs control of the flash unit 18 in accordance with a signal from the camera

microcomputer 100, and performs various kinds of control, such as control of the amount of emission, control of the emission intensity and the emission time of a flat emission, and control of the illuminating angle of an emission"; **col. 7, line 65 – col. 8, line 5.**

FUKUI further teaches that the "feedback" is provided by a "light measuring circuit 106" which "supplies the output from the light measuring sensor 7 to the computer microcomputer 100 as a luminance signal indicative of the luminance of the subject"; **col. 6, lines 59 – 62.** "The camera microcomputer 100 performs A/D conversion of the luminance signals, and performs a computation on an aperture value to adjust the amount of exposure for photography, a computation on a shutter speed, and *a computation on the amount of emission of the main emission of the flash unit 18 during exposure*"; **col. 6, line 67 – col. 7, line 6.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of FUKUI with those of BEVANS, CHITAYAT and well-known prior art so as to provide proper illumination control of a flash unit or flood-lamp through use of a "light measuring" feedback signal to a computer (i.e., a "flash-unit microcomputer").

Regarding claim 3, BEVANS and CHITAYAT do not specifically teach the system for reproduction of a work of fine art as set forth in claim 2 wherein said

control of the illumination is provided by an illumination computer

However, as noted for claim 2, FUKUI teaches control of the illumination is provided by a "flash-unit microcomputer".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of FUKUI with those of BEVANS, CHITAYAT and well-known prior art so as to provide proper illumination control of a flash unit or flood-lamp through use of an illumination computer (i.e., a "flash-unit microcomputer").

16. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **BEVANS [US Patent Application 2004/0056965]**, **CHITAYAT [US Patent 3,794,422]**, **well-known prior art,** and **FUKUI [US Patent 6,167,202]** in view of **WHITE [US Patent 5,761,540]**.

Regarding claim 4, BEVANS, CHITAYAT and FUKUI do not specifically teach the system for reproduction of a work of fine art as set forth in claim 2 wherein said

~~**control of the**~~ **illumination is provided by optical fiber cables.**

WHITE teaches "an illumination device for illuminating an object to be observed by a machine vision camera"; **col. 1, lines 13 – 15**. WHITE further teaches that illumination may be provided by optical fiber cables. WHITE explains, "The embodiment of FIG. 5 is

similar to the previous embodiment except that the light arrays 29 and 30 are replaced with a pair of fiber optic light guides 29' and 30'. Each one of the fiber optic guides 29' and 30' is directed to shine light on a desired one of the first and second diffuser portions. It is to be appreciated that the number and orientation of the light sources, the light arrays, the fiber optic guide, etc., can be varied depending upon the application at hand"; **col. 7, lines 41 – 49.**

WHITE further teaches that an "important requirement of the light source is that it be capable of supplying a substantially uniform intensity of light"; **col. 9, lines 9 – 11.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of WHITE with those of BEVANS, CHITAYAT, FUKUI and well-known prior art so as to provide illumination of uniform intensity by optical fiber cables.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **BEVANS [US Patent Application 2004/0056965]** in view of **HAGAI [US Patent Application 2003/0072043 A1]** and **CHEN [US Patent 6,878,197 B2]**.

As for claim 5, BEVANS teaches the process for reproduction of a work of fine art having steps comprising:

capturing the image of a two-dimensional work-of-art in digital form

[BEVANS teaches a "method for correcting color of digital images generated by an image capture device, the method including evaluating a reference digital image of a real-life reference target on a viewing monitor, comparing at least one color in the reference digital image with a corresponding color in the real-life reference target itself"; **page 3, paragraph 37, lines 2 – 7.**

BEVANS further teaches the acquisition of a "digital image of a reference target, which may be any object, picture, drawing, etc., that is capable of being compared to the digital image of the reference target once acquired"; **page 5, paragraph 79, lines 2 – 5.**

BEVANS further teaches "any standard recording device may be used to acquire the digital image, such as a digital camera"; **page 5, paragraph 80, lines 1 – 2];**

converting the image from RGB to CMYK color

[BEVANS teaches that a digital camera may "encode an image of a physical object using ... additive RGB" colorspace; **page 3, paragraph 32, lines 1 – 3.**

BEVANS further teaches the use of "color management profiles" so that a color pixel acquired from a digital camera and viewed on a monitor appears visually indistinguishable when printed. BEVANS explains, "Color Management Profiles are device specific profiles that convert colors from a device-specific color

encoding scheme into coordinates of a standard color space ..., as well as convert coordinates from the standard color space into colors of the device-specific color encoding scheme"; **page 3, paragraph 33, lines 3 – 8.**

Referring to **Fig. 1g,** BEVANS further provides an example where RGB data (from a digital camera) is transformed into a standard color space (e.g., CIE XYZ) by means of the device-specific monitor ICC profile 295. Then a printer-specific ICC profile 300 is used to convert from the standard color space to, in this example, CMY color space. "In this manner, the color of the pixel as viewed on the monitor 280 may closely resemble the color of the pixel reproduced by the printer 285"; **page 3, paragraph 35, lines 10 – 13.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to convert the image from RGB to CMYK for an inkjet printer which printed with cyan, magenta, yellow and black colorants**];**

correcting the CMYK color monitor image

[BEVANS teaches a color correction method whereby "a subtractive CMYK evaluation and correction procedure is used to correct color variations between the digital image of the reference target and the real-life reference target itself"; **page 7, paragraph 96, lines 6 – 9.** "The observer may, for example, add cyan (or subtract both magenta and yellow) to the digital image if the (red) of the digital

image is too red as compared to the corresponding (red) of the real-life reference target"; **page 7, paragraph 97, lines 7 - 11];**

and printing a reproduction of the work-of-art which is visually indistinguishable from the original work-of-art

[As noted above, by use of the ICC color profiles, "the color of the pixel as viewed on the monitor 280 may closely resemble the color of the pixel reproduced by the printer 285"; **page 3, paragraph 35, lines 10 – 13].**

However, BEVANS does not specifically teach

creating a profile for the image for printing of the image on a given substrate using a given inkjet printing machine with pigment inks;

HAGAI teaches an apparatus and method for creating a printer color profile based on substrate (or printing media) and types of ink. HAGAI cites, "the output profile has been created calculating equations (9) – (11) based on the excitation-reflectance data ... in the two-dimensional excitation characteristics tables Ti that *correspond to the paper type used in the inkjet printer*"; **page 10, paragraph 158, lines 6 – 10.** In a modification to the method, HAGAI teaches that "the excitation characteristics vary not only according to types of paper, but also according to types of ink"; **page 11, paragraph 171, lines 5 – 7.**

Regarding pigmented inks, CHEN teaches, "When designed properly, pigment based inks usually can demonstrate image stability significantly higher than dye based inks, and more importantly, approaching the archival quality as compared to silver halide photographic prints"; **col. 1, lines 55 – 58.**

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of HAGAI and CHEN with those of BEVANS to include *creating a profile for the image for printing of the image on a given substrate using a given inkjet printing machine with pigment inks* so that similar corrections to the output ICC printer color profile could be made taking into account both substrate and ink types allowing one to produce visually indistinguishable printed reproductions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter L. Cheng whose telephone number is 571-270-3007. The examiner can normally be reached on MONDAY - FRIDAY, 8:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

plc

KING Y. POON
SUPERVISORY PATENT EXAMINER